

REMARKS

By this Amendment, claims 16, 19, 21 and 26 are amended, and claims 18, 20, 24 and 29 are cancelled. Claims 17, 22-23, 25, 27-28 and 30-31 remain in the application. Thus, claims 16-17, 19, 21-23, 25-28 and 30-31 are now active in the application. Reexamination and reconsideration of the application are respectfully requested.

Amendments to claims 16, 19, 21 and 26 are made herein in view of the new art applied by the Examiner to finally reject the claims. Therefore, the Applicants respectfully request the Examiner to consider and enter the amendments to claims 16, 19, 21 and 26 made after the Final Office Action.

Also by this Amendment, various editorial revisions were made to paragraphs [0003] and [0006] of the substitute specification filed on February 24, 2003. The Applicants submit that the amendments made to the specification are editorial in nature and do not constitute new matter. The Applicants respectfully request the Examiner to enter the amendments to the specification.

In item 2 on page 2 of the Office Action, claims 16-23, 26-28 and 30-31 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Kanazawa et al. (U.S. 6,288,692) in view of Marcotte (U.S. 6,411,035). Claims 16 and 26 have been amended, in part, to include the limitations of cancelled claims 24 and 29, respectively. In item 3 on page 4 of the Office action, claims 24-25 and 29 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Kanazawa et al. in view of Marcotte and further in view of Yamada (U.S. 6,275,203). These rejections are traversed. The Applicants respectfully submit that claims 16-17, 19, 21-23, 25-28 and 30-31 are clearly patentable over Kanazawa et al. in view of Marcotte and Yamada for the following reasons.

The present invention provides an alternating current (AC) plasma display panel having a first substrate 8 and a second substrate 14 that are disposed facing each other to form a discharge space

18 therebetween. At least one of the first substrate 8 or the second substrate 14 is transparent. A plurality of display electrodes are disposed over the first substrate 8 and are arranged in rows, i.e., in a stripe pattern. Each display electrode comprises a scan electrode 10 and a sustain electrode 11. One or more conductors 12 are disposed over the first substrate 8, and each of the conductors 12 are adjacent to a respective one of the display electrodes and are spaced from a respective scan electrode 10 and a sustain electrode 11. The conductors 12 are arranged so that, when a pulse voltage is applied to the display electrodes, currents run through the conductors 12 in a reverse direction to a current running through the display electrodes. A dielectric layer 9 is disposed over the first substrate 8 and covers the display electrodes and the conductors 12. Further, a plurality of data electrodes 15 are disposed over the second substrate 14 and are further disposed perpendicular to the display electrodes. A plurality of phosphors 17 are placed along the data electrodes 15, respectively. In another aspect of the present invention, a barrier 19 is disposed on the dielectric layer 9 such that the barrier extends longitudinally approximately parallel with the conductors 12. Since the barrier 19 is disposed on the dielectric layer 9, which covers the display electrodes and the conductors 12 disposed over the first substrate, the barrier 19 is closer to the second substrate 14 than the display electrodes and the conductors 12. In yet another aspect of the present invention, each of the conductors 12 is electrically connected to a respective one of a scan electrode 10 and sustain electrode 11 of a display electrode.

Claim 16 has been amended to recite that the conductors disposed over the first substrate are adjacent to a respective one of the display electrodes and that the conductors are spaced from a scan electrode and a sustain electrode of a respective one of the display electrodes. Claim 26 recites that at least one conductor is disposed over the first insulating substrate and is approximately parallel with

the display electrodes. Claim 26, as amended, also recites that the conductor is spaced from the scan electrode and the sustain electrode. Furthermore, claims 16 and 26 have each been amended to recite that the conductors are arranged so that, when a pulse voltage is applied to the display electrodes, currents run through the conductors in a reverse direction to a current running through the display electrodes. In addition, claim 16 recites the barrier being disposed on the dielectric layer such that the barrier extends longitudinally approximately parallel with the conductors. Further, claim 26 recites that each conductor is electrically connected to a respective one of the scan electrode and the sustain electrode.

Claim 16 recites a plurality of display electrodes disposed over the first substrate and arranged in rows, where each of the display electrodes comprises a scan electrode and a scan electrode. As described above, claim 16 also recites one or more conductors disposed over the first substrate. In addition, claim 16 recites a dielectric layer covering the display electrodes and the conductors. Further, claim 16 also recites a barrier disposed on the dielectric layer such that the barrier extends longitudinally approximately parallel with the conductors. In the paragraph spanning pages 2 and 3 of the Office Action, the Examiner asserted that Kanazawa et al. discloses a barrier identical to the barrier as recited in claim 16. However, the Applicants respectfully submit that the barrier of Kanazawa et al. is markedly different than the barrier as recited in claim 16. Since the barrier is recited in claim 16 as being disposed on the dielectric layer and since the dielectric layer is recited as covering the display electrodes and the conductors disposed over the first substrate, the barrier of claim 16 therefore is recited as being closer to the second substrate than the display electrodes and the conductors. On the other hand, Kanazawa et al. discloses a “barrier” (light interceptive members) 58 formed in the third slits 73 in order to prevent light from leaking out (see Column 10, lines 23-26,

Figure 14, Column 11, lines 47-51 and Figure 19). In accordance with the Examiner's labeling of the elements in the May 21, 2003 and October 23, 2002 Office Actions, the Applicants direct the Examiner's attention to Figures 14 and 18-20 in which the "barrier" 58 is clearly disclosed as being farther from the rear glass substrate (the "second substrate") than the "scan electrodes" (Y electrodes) 51, the "sustain electrodes" (Xo electrodes) 52o and the "conductors" (Xe electrodes) 52e, which is markedly different than the barrier as recited in claim 16. As described above, the barrier of claim 16 is clearly recited as being closer to the second substrate than the display electrodes and the conductors since it is recited as being disposed *on* the dielectric layer, which is recited as covering the display electrodes and the conductors. Accordingly, for disclosing a barrier disposed on a dielectric layer which is not closer to a rear glass substrate ("second substrate") than the "sustain electrodes" 51, the "scan electrodes" 52o and the "conductors" 52e, Kanazawa et al. clearly does not disclose or suggest the barrier of claim 16.

Moreover, neither Marcotte nor Yamada disclose, suggest or even contemplate a barrier disposed on a dielectric layer such that the barrier extends longitudinally approximately parallel with the conductors, as recited in claim 16. Marcotte discloses barrier ribs 16 supported by a back plate (see Column 1, lines 23-35). However, with reference to Figures 1 and 3, and in accordance with the Examiner's labeling of the elements of Marcotte, the barrier ribs 16 of Marcotte are clearly disclosed as being perpendicular to the "conductor" (transparent electrode) 40 and the "display electrodes" (10, 42 and 44), whereas the barrier of claim 16 is recited as extending longitudinally approximately parallel with the conductors. Accordingly, since Kanazawa et al., Marcotte and Yamada each fail to disclose or suggest the barrier of claim 16, the Applicants respectfully submit that claim 16 is clearly patentable over Kanazawa et al., Marcotte and Yamada.

As described above, claim 16, as amended, recites that the conductors disposed over the first substrate are adjacent to a respective one of the display electrodes and that the conductors are spaced from a scan electrode and a sustain electrode of a respective one of the display electrodes. Claim 26, as amended, recites that at least one conductor is disposed over the first substrate approximately parallel with the display electrodes and is spaced from the scan electrode and the sustain electrode. In rejecting claims 16 and 26, the Examiner cited Marcotte as disclosing one or more conductors 40 adjoining a respective one of the display electrodes (10, 42, 44). Clearly, Marcotte does not disclose or suggest conductors disposed over the first substrate that are adjacent to, or approximately parallel with, a respective one of the display electrodes and are spaced from a scan electrode and a sustain electrode of a respective one of the display electrodes, as recited in claims 16 and 26. Instead, Marcotte discloses wide, transparent electrodes 40 that are “connected to sustain feed electrodes 10 and scan feed electrodes 42, 44, respectively” (see Column 2, lines 7-10 and Figure 3). Accordingly, by disclosing “conductors” 40 that are connected to sustain electrodes 10 and scan electrodes 42, 44, Marcotte fails to disclose or suggest conductors disposed over the first substrate that are adjacent to or approximately parallel with a respective one of the display electrodes and that are spaced from a scan electrode and sustain electrode of a respective one of the display electrodes, as recited in claims 16 and 26.

Similarly, Yamada does not disclose, suggest or contemplate conductors disposed over a first substrate, where each of the conductors are adjacent to, or approximately parallel with, a respective one of the display electrodes and are spaced from the scan electrode and the sustain electrode of a respective one of the display electrodes, as recited in claims 16 and 26. In fact, Yamada does not even contemplate conductors as an element for its plasma display panel. Instead, Yamada merely

discloses discharge electrodes 33 composed of scanning electrode 34 and sustain electrode 35 arranged at upper and lower locations, respectively (see Column 8, lines 2-5 and Figures 4, 6, 8, and 9-21). Accordingly, the Applicants respectfully submit that neither Marcotte nor Yamada disclose or suggest conductors disposed over a first substrate, where each of the conductors are adjacent to, or approximately parallel with, a respective one of the display electrodes and are spaced from the scan electrode the sustain electrode of a respective one of the display electrodes, as recited in claims 16 and 26.

In accordance with the Examiner's labeling of the elements of Kanazawa et al. in the May 21, 2003 and October 23, 2002 Office Actions, Kanazawa et al. discloses "conductors" (Xe electrodes) 52e spaced from the "scan electrodes" 51 and the "sustain electrodes" 52o. However, for the following reasons, the "conductors" 52e of Kanazawa et al. are markedly different from the conductors as recited in claims 16 and 26.

As described above, claim 26 recites a conductor being electrically connected to a respective one of the scan electrodes and the sustain electrodes. In accordance with the Examiner's labeling of the elements, and in view of Column 10, lines 15-39 and Figures 13 and 14, Kanazawa et al. does not teach a conductor being electrically connected to one of the scan electrodes and the sustain electrodes. Instead, Kanazawa et al. teaches that "scan electrodes" (Y electrodes) 51 are connected to a scan driver 62, "sustain electrodes" (Xo electrodes) 52o are connected to an odd X sustaining circuit 61o, and "conductors" (Xe electrodes) 52e are connected to an even X sustaining circuit 61e. In other words, "sustain electrode 52o" is electrically connected to X sustaining circuit 61o completely independent of "conductor 52e", "scan electrode 51" is electrically connected to scan driver 62 completely independent of "conductor 52e", and "conductor 52e" is electrically connected

to X sustaining circuit 61e completely independent of “sustain electrode 52o” or “scan electrode 51”. Accordingly, Kanazawa et al. does not teach or suggest a conductor being electrically connected to a respective one of the scan electrodes and the sustain electrodes, as recited in claim 26.

Moreover, as described above, claims 16 and 26 have each been amended to recite that the conductors are arranged so that, when a pulse voltage is applied to the display electrodes, currents run through the conductors in a reverse direction to a current running through the display electrodes. As described in paragraph [0034] of the substitute specification, “[d]uring the sustaining discharge, the current running through the scan electrode SCN_j and sustain electrode SUS_j and the current running through conductor CW_j simultaneously run in reverse directions with respect to each other. [Therefore, t]he electromagnetic wave generated by the current running through conductor CW_j respectively have reverse polarities and thus perfectly cancel each other.” Accordingly, due to this important feature of the present invention, electromagnetic waves generated from the sustain electrode, scan electrode or conductors do not radiate out of the panel.

As described above, this limitation of claims 16 and 26 was originally presented in cancelled claims 24 and 29. The Examiner rejected claims 24 and 29 as being unpatentable over Kanazawa et al. in view of Marcotte and further in view of Yamada. Acknowledging that neither Kanazawa et al. nor Marcotte disclose, suggest or even contemplate conductors being arranged so that, when a pulse voltage is applied to the display electrodes, currents run through the conductors in a reverse direction to a current running through the display electrodes, the Examiner, in item 3 on page 4 of the Office Action, asserted that Yamada teaches the voltages applied to the scan electrodes 34 and sustain electrodes 35 having opposite polarities. Further, the Examiner concluded that the since one of the conductors 40 of Marcotte physically connects to scanning line 42, at least one of the conductors 40

has the same polarity as the scanning conductor 40, which is opposite in polarity to the sustain electrode 10 as modified by Yamada. The Examiner further concluded that it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the voltages applied to scan and sustain electrodes with opposite polarity as taught by Yamada to the driving circuit of Kanazawa et al. so that “an electromagnetic noise generated in the electrodes can be cancel[l]ed by another”.

As described above, the conductors of claims 16 and 26 are recited as being spaced from a scan electrode and a sustain electrode of a respective one of the display electrodes. Accordingly, since the conductors are spaced from, instead of being “physically” connected to, the display electrodes, the conductor of claims 16 and 26 do not have the same polarity as the scan electrode, which has the opposite polarity to the sustain electrode, according to the combination of Marcotte and Yamada. In fact, since the conductors of claims 16 and 26 are recited as being arranged so that, when a pulse voltage is applied to the display electrodes, currents run through the conductors in a reverse direction to a current running through the display electrodes, the conductors are operable to generate an electromagnetic wave having a polarity that is reverse to the polarity of an electromagnetic wave generated by a current running through a respective one of the display electrodes. Therefore, the Applicants respectfully submit that Kanazawa et al., Marcotte and Yamada, either individually or in combination, fail to disclose or suggest conductors being spaced from a scan electrode and a sustain electrode of a respective one of the display electrodes, where the conductors are arranged so that, when a pulse voltage is applied to the display electrodes, currents run through the conductors in a reverse direction to a current running through the display electrodes, as recited in claims 16 and 26.

Thus, since Kanazawa et al., Marcotte and Yamada each fail to disclose or suggest each and every limitation of the present invention as recited in claims 16 and 26, no obvious combination of Kanazawa et al. nor Marcotte would result in the invention of claims 16 and 26. Therefore, since Kanazawa et al., Marcotte or Yamada, either individually or in combination, fail to disclose or suggest the limitations of claims 16 and 26, the Applicants respectfully submit that claims 16 and 26 are clearly allowable over Kanazawa et al. in view of Marcotte and Yamada.

Because of the clear distinctions discussed above, it is submitted that the teachings of the applied references, either individually or in combination, do not meet each and every limitation of claims 16 and 26. Furthermore, it is submitted that the distinctions are such that a person having ordinary skill in the art at the time the invention was made would not have been motivated to modify Kanazawa et al., Marcotte and Yamada or to make any combination of the references of record in such a manner as to result in, or otherwise render obvious, the present invention as recited in claims 16 and 26. Therefore, it is submitted that claims 16 and 26, as well as claims 17, 19, 21-23, 25, 27-28 and 30-31 which depend therefrom, are clearly allowable over the prior art of record.


In view of the foregoing amendments and remarks, it is respectfully submitted that the present application is clearly in condition for allowance. An early notice thereof is respectfully solicited.

If, after reviewing this amendment, the Examiner feels there are any issues remaining which must be resolved before the application can be passed to issue, it is respectfully requested that the Examiner contact the undersigned by telephone in order to resolve such issues.

A fee and a Request for a one-month Extension of Time if filed herewith pursuant to 37 CFR
§ 1.136(a).

Respectfully submitted,

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